

Information Technology Infrastructure Committee (ITIC)

*Status report to the
NASA Advisory Council*

April 24, 2013

Charles Holmes
Vice-Chair ITIC

ITIC Committee Members



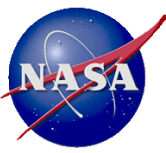
Membership

- *Dr. Larry Smarr (Chair), Director- California Institute of Telecommunications and Information Technology, UC San Diego*
- *Dr. Charles Holmes (Vice-Chair), Retired- NASA HQ Heliophysics Program*
- *Mr. Alan Paller, Research Director- SANS Institute*
- *Dr. Robert Grossman, Professor- University of Chicago*
- *Dr. Alexander Szalay, Professor- Johns Hopkins University*
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New Members

- *Dr. Mark Boster; President-ImpaQ Solutions, LLC*
- *Hon. Mark Forman, former associate director of IT and e-government, OMB*
- *Mr. Joel Mambretti, Director, Intl. Center for Advanced Internet Research, NW Univ.*
- *Dr. Ed Lazowska, Gates Professor & Chair , Dept of Computer Science, UWash*
- *Dr. Pete Beckman, Dir., Exascale Technology and Computing Institute, Argonne NL*
- *Mr. John Muratore, former NASA engineer & Program Manager, now with Space X*

- *Mr. Jason Gillis (Exec Sec), Special Assist. to CIO, NASA*



2013 Committee Meeting Schedule

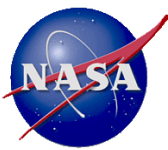
March 2013 - Cancelled

July 29 & 30 - at HQ –

- Meet the new CIO
- NAC All-hands
- Space Communications Topics
- HEO Space Life & Physical Sciences Opportunities

Dec 9 & 10 - at KSC –

- SLS Launch Segment

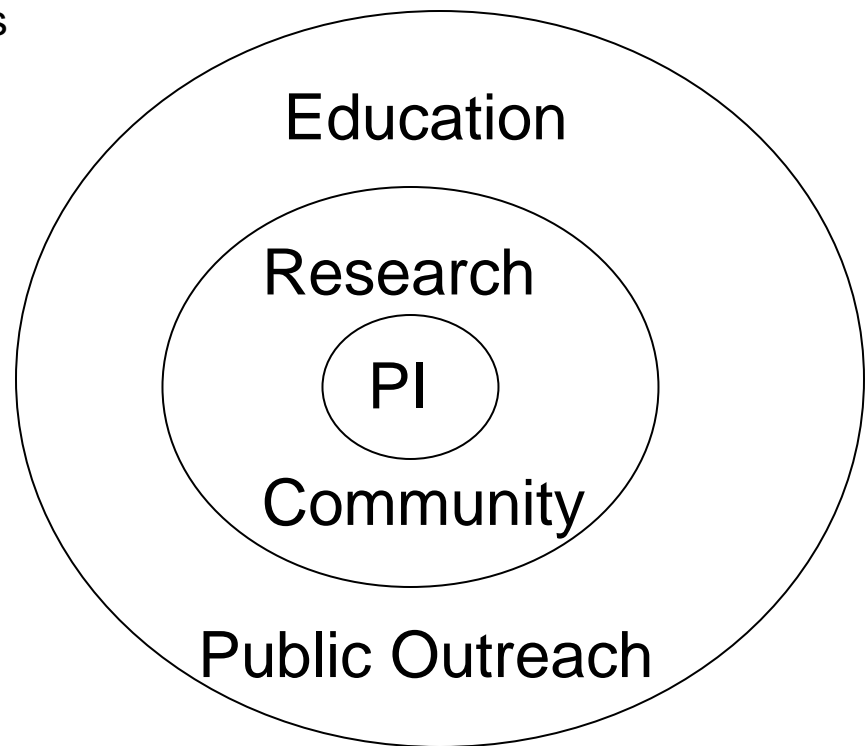


- ◆ **Recommendation:** NASA should formally review the existing national data cyberinfrastructure supporting access to data repositories for NASA SMD missions. A comparison with best-of-breed practices within NASA and at other Federal agencies should be made.
- ◆ We request a briefing on this review to a joint meeting of the NAC IT Infrastructure, Science, and Education committees within one year of this recommendation. The briefing should contain recommendations for a NASA data-intensive cyberinfrastructure to support science discovery by both mission teams, remote researchers, and for education and public outreach appropriate to the growth driven by current and future SMD missions.

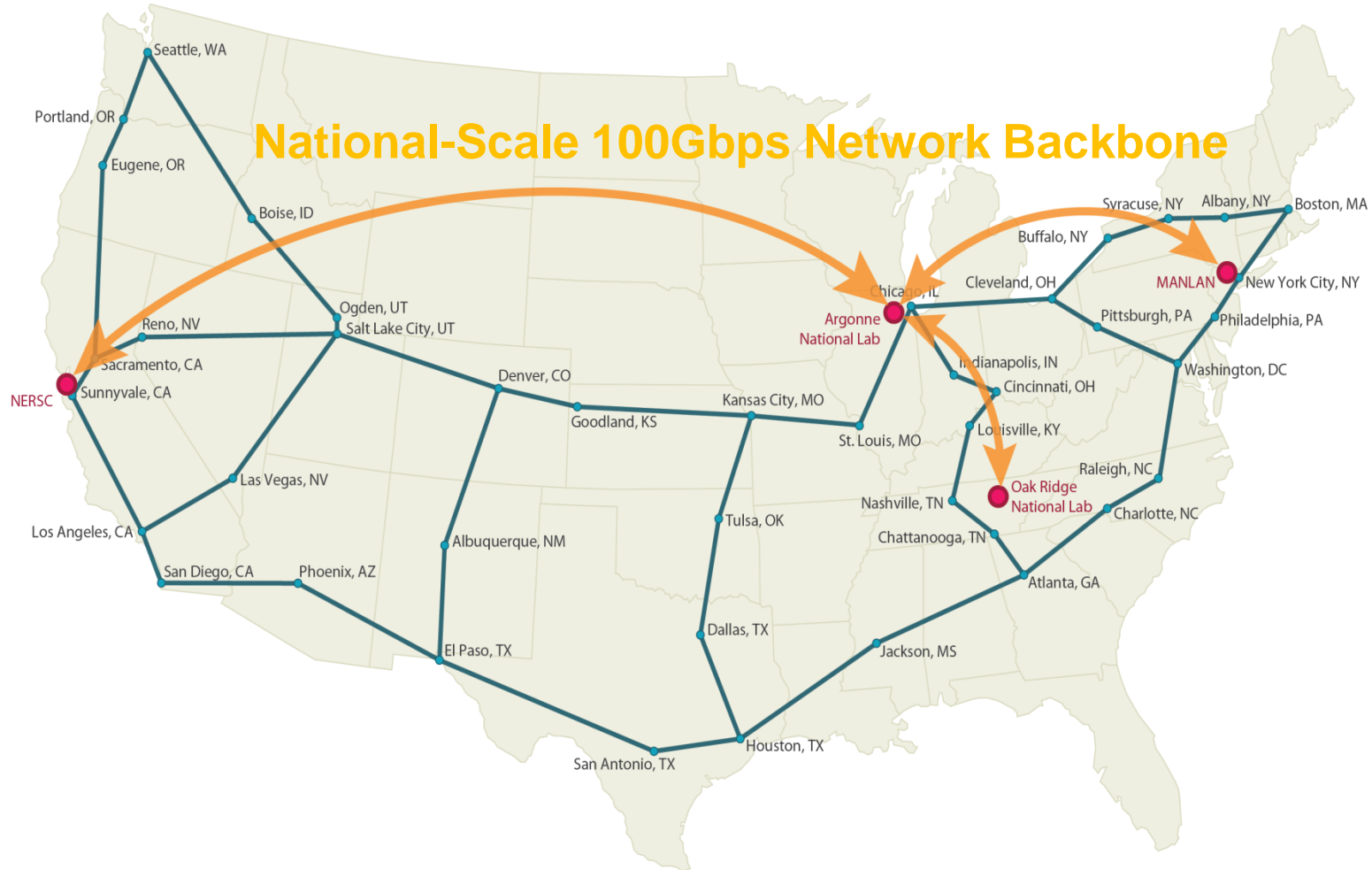
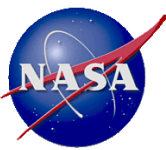
* To be completed after a joint meeting of ITIC, Science, and Education Committees in July 2012 and the final recommendation submitted to July 2012 NAC meeting

◆ SMD Data Resides in a Highly Distributed Servers

- Many Data Storage and Analysis Sites Are Outside NASA Centers
- Access to Entire Research Community Essential
 - Over Half Science Publications are From Using Data Archives
 - Secondary Storage Needed in Cloud with High Bandwidth and User Portal
- Education and Public Outreach of Data Rapidly Expanding
 - Images/Videos for Public Relations
 - Apps for Smart Phones
 - Crowd Sourcing



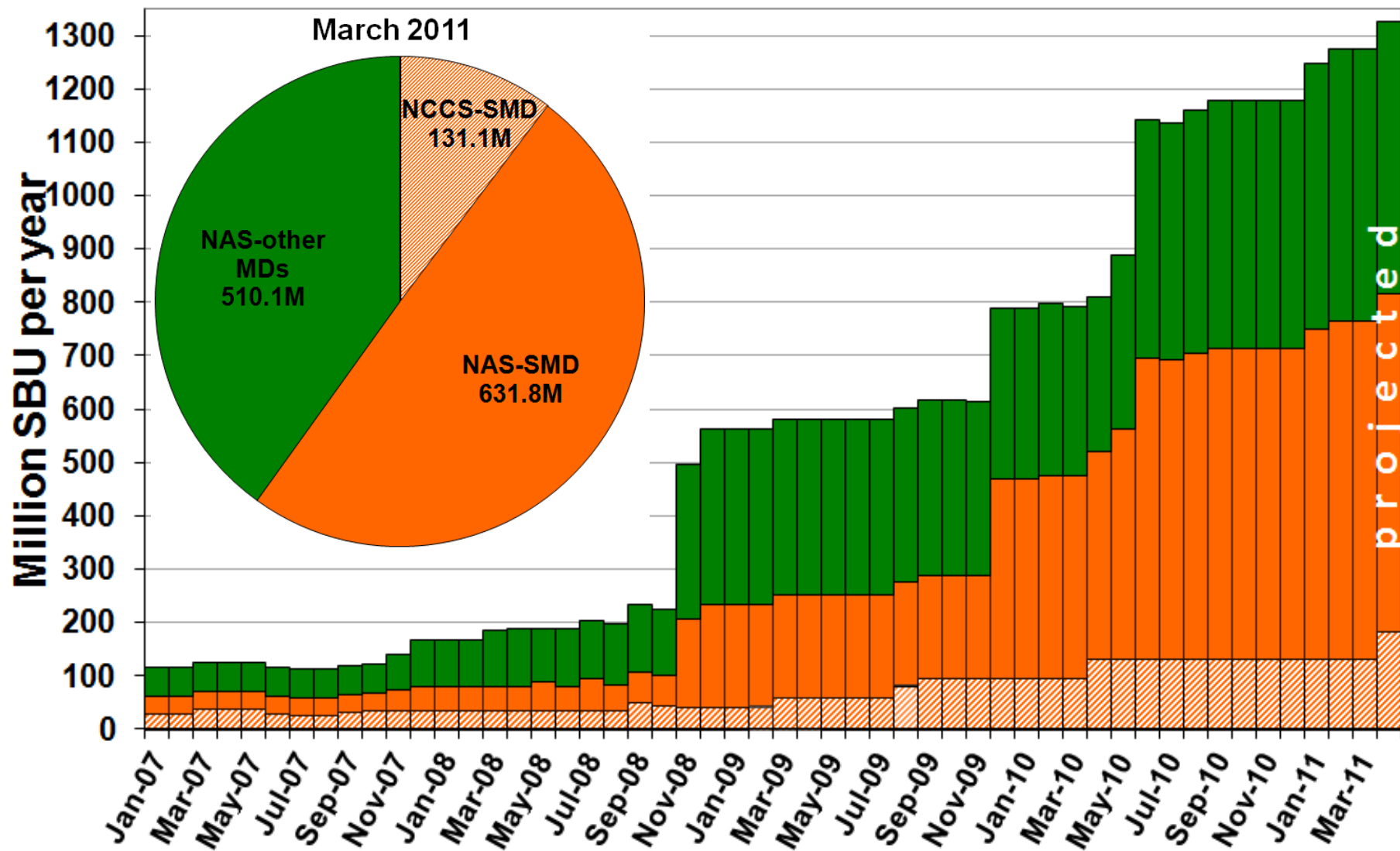
Partnering Opportunities with DOE: ARRA Stimulus Investment for DOE ESnet



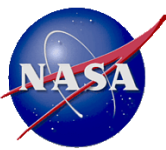
Source: Presentation to ESnet Policy Board

SMD is a Growing NASA HPC User Community

All Missions HEC Capacity Shares in SBUs



Source: Tsengdar Lee, Mike Little, NASA



ITIC Chairman briefed the Science Subcommittees and received detailed feedback

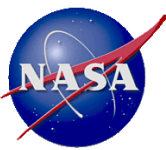
- ◆ **Heliophysics – October 11, 2012**
- ◆ **Astrophysics – November 6, 2012**
- ◆ **Planetary Science – April 4, 2013**
- ◆ **Earth Science – April 11, 2013**

Next Step: Schedule meeting between:

- Associate Administrator of SMD and Heads of
- ITIC Committee,
- Science Committee
- Education and Public Outreach Committee

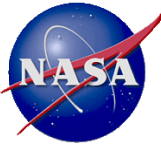
to consolidate notes from four briefings and decide on next steps

Major Points of Agreement Between ITIC and Science Subcommittees:



Science-Driven IT and Networking Infrastructure Improvements:

- ◆ Higher throughput end-to-end networking
- ◆ Federation across mission datasets
- ◆ Avoid centralization of mission IT support



Discussion